REMARKS

Claims 1 to 30 are pending in the application, of which claims 1, 8, 11, 18, 21, and 28 are independent. Favorable reconsideration and further examination are respectfully requested.

Claims 1 to 30 were rejected under 35 U.S.C. 103(a) as being unpatentable over Arai (2001/0026278A1; hereinafter "the Arai reference") in view of Pallister (2002/0101421; hereinafter "the Pallister reference"). Applicants traverse the rejection of claims 1, 11 and 21 and their dependent claims. Applicants have amended claims 8, 18, and 28, as shown to define the invention with greater clarity. Accordingly, withdrawal of the art rejections is respectfully requested.

Independent claim 1 defines a method of modifying a three-dimensional model having three-dimensional data defining bones and a polygon mesh. The method includes reducing a resolution of the polygon mesh, and reducing a number of bones in the three-dimensional model following reducing the resolution of the polygon mesh.

The applied art is not understood to disclose or suggest the foregoing features of claim 1. In particular, neither the Arai reference nor the Pallister reference, taken separately or in combination, disclose or suggest reducing a number of bones in the three-dimensional model following reducing the resolution of the polygon mesh.

Applicants agree with the Examiner that the Arai reference does not disclose reducing the number of bones in a three-dimensional model following reducing the resolution of the polygon mesh. The Pallister reference was cited for its alleged disclosure of this feature.

In particular, the Pallister reference was cited for the proposition that it discloses reducing a skeleton following reducing a polygon mesh to further compress data. More specifically, it was stated on page 2 of the Office Action (referring to claim 1) that

> Arai does not reduce the number of bones after reducing the polygon mesh. Pallister teaches that the skeletal information may be used to determine when to repeat the reduction process (page 2, column 1, lines 5-8) to further compress the data. Repeat implies that the operation was already performed once prior to the reduction of the skeleton. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Arai's compression apparatus to reduce the number of [bones] after reducing the polygon mesh as taught by Pallister because this further compresses the data.

Applicant respectfully disagrees with this contention for at least the following reasons. The Pallister reference states on page 2, column 1, lines 5-8 that

> [s]keletal information, i.e., the movement of "bones" defining the skeletal structure of 3D model 10, may be used to determine when to repeat the detail reduction process.

What Pallister is saying here is that the during the pre-processing phase, the Pallister system performs a detail reduction process on the 3D model at plural positions corresponding to a movement of bones defining a skeletal structure of the 3D model. That is, each time the bones move, the 3D model is evaluated using a detail reduction process to identify a preliminary set of details to be removed from the 3D model. One reason for doing this is that edge removal when a 3D model is in one position can have adverse effects on other positions of the 3D model. As such, the Pallister system takes into account movement of 3D model when determining which details should be removed. The Pallister reference does not disclose reducing the number of bones in the 3D model, much less reducing the bones following reducing the resolution of the polygon mesh.

Given the foregoing deficiencies of Arai and Pallister, even if these references were combined, the resulting hypothetical combination would still not disclose or suggest reducing a

resolution of a polygon mesh, and reducing a number of bones in the three-dimensional model following reducing the resolution of the polygon mesh. For at least this reason, Applicants submit that claim 1 is allowable.

Claims 11 and 21 roughly correspond to claim 1. Accordingly claims 11 and 21 are believed to be allowable for at least the same reasons noted above with respect to claim 1.

Amended independent claim 8 defines a method of modifying a three-dimensional model having three-dimensional data defining a polygon mesh. The method includes constructing a bones infrastructure for the polygon mesh, removing edges of polygons in the polygon mesh to reduce a resolution of the polygon mesh, receiving an instruction to reduce a number of bones in the bones infrastructure, reducing the number of bones in the bones infrastructure in response to the instruction following reducing the resolution of the polygon mesh, and associating the polygon mesh with the bones infrastructure having a reduced number of bones.

As explained above with respect to claim 1, neither the Arai reference nor the Pallister reference, taken separately or in combination, disclose or suggest reducing a number of bones in the bones infrastructure following reducing the resolution of the polygon mesh. Accordingly, claim 8 is also believed to be allowable.

Claims 18 and 28 roughly correspond to claim 8. Accordingly claims 18 and 28 are believed to be allowable for at least the same reasons noted above with respect to claim 8.

In view of the foregoing amendments and remarks, the entire application is believed to be in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

No fee is believed to be due for this Reply; however, if any fees or credits are due, please apply them to Deposit Account 06-1050.

Respectfully submitted,

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